

WE CLAIM:

1. A router device constructed such that each of a plurality of networks having either at least one communication terminal or at least one router device connected thereto is connected to each other and a connection between communication terminals to perform a communication through a plurality of said networks is managed as a connection by at least two of said router devices, said router device comprising:

receiving means for receiving a packet from said plurality of networks;

connection acknowledging means for acknowledging a connection to communicate with said packet in reference to the content of the packet received by said receiving means;

transmission means for transferring said received packet to said network corresponding to the connection acknowledged by said connection acknowledging means;

management table having information indicating the content of a traffic control performed in respect to said connection for every connection of said communication terminal connected to said network connected to said router device without passing through other router devices;

connection management means for generating a control packet including information indicating said connection in the case that the packet received by said receiving means is a packet of not-opened connection and information indicating the content of traffic control registered in said management table in correspondent with said connection and transmitting the generated control packet to other router devices included in

said connection from said transmission means;

communication control means for opening said connection in response to both information indicating a connection used for generating said control packet and information indicating the content of the traffic control and for applying a traffic control to the packet transferred by said transmission means in respect to said connection; and

registering means for revising the content of registration of said management table in response to a predetermined instruction for management.

2. A router device as set forth in Claim 1, wherein:

the traffic control performed by said communication control means comprises a control for discarding a part of the packets to be transferred and a control for changing an order of transferring of the packets to be transferred; and

the content of the traffic control for every connection registered in said management table indicates a discard-ok or a discard-no state of the packet of said connection and a priority degree of transferring order of said packet.

3. A router device as set forth in Claim 1, further comprising

a permit list indicating either an allowed opening or not-allowed opening of said connection for every connection; and

wherein said connection management means checks a

control packet transmitted from a terminal connected to the router device without passing through other router device for opening its connection using said permit list; and

discards the packet transmitted for the connection not allowed for its opening without any processing.

4. A router device as set forth in Claim 1, wherein:

said connection acknowledging means acknowledges the type of said received packet;

said management table has information indicating the content of the traffic control for said every connection which is registered for every type of said packets; and

said connection management means generating said control packet using information indicating the content of the traffic control registered in said management table in correspondence with the types of the connection and the packet acknowledged by said connection acknowledging means.

5. A router device as set forth in Claim 4, wherein:

said packet includes a protocol information indicating a protocol used in communication of said packet and an application information indicating an application of said communication terminal for processing the content of said packet; and

said connection acknowledging means acknowledges the type of packet in response to said protocol information and the application information.

6. A router device as set forth in Claim 5, wherein:
said packet includes a priority information desired by a terminal device transmitting said packet, the priority information indicating a degree of priority of the processing on said packet; and

said connection acknowledging means acknowledges the type of packet in reference to said priority information.

7. A router device constructed such that each of a plurality of networks having either at least one communication terminal or at least one router device connected thereto is connected to each other and a connection between communication terminals to perform a communication through a plurality of said networks is managed as a connection by at least two of said router devices, said router device comprising:

receiving means for receiving a packet from said plurality of networks;

connection acknowledging means for acknowledging a connection to communicate with said packet in reference to the content of the packet received by said receiving means;

transmission means for transferring said received packet to said network corresponding to the connection acknowledged by said connection acknowledging means;

a management table having information indicating the content of a traffic control performed in respect to said connection for every connection of said communication terminal connected to said network connected to said router device without passing through other router devices;

a permit list indicating either an allowed opening or not-allowed opening of said connection for the connection;

connection management means for checking a control packet transmitted from a terminal connected to the router without passing through other router devices for opening its connection using said permit list and discarding the packet transmitted for the connection not allowed for its opening without any processing;

communication control means for opening said connection allowed for its opening in said permit list in response to information contained in said control packet received by said receiving means and for applying a traffic control to the packet transferred by said transmission means in respect to said connection in response to information indicating the content of the traffic control; and

registering means for revising the content of registration of said management table in response to a predetermined instruction for management.

8. A router device as set forth in Claim 7, wherein:

the traffic control performed by said communication control means comprises a control for discarding a part of the packets to be transferred and a control for changing an order of transferring of the packets to be transferred; and

the content of the traffic control for every connection registered in said management table indicates a discard-ok or a discard-no state of the packet of said connection and a priority degree of transferring order of said

packet.

9. A router device as set forth in Claim 7, wherein:

said connection acknowledging means acknowledges the type of said received packet;

said management table has information indicating the content of the traffic control for said every connection which is registered for every type of said packets; and

said connection management means generating said control packet using information indicating the content of the traffic control registered in said management table in correspondence with the types of the connection and the packet acknowledged by said connection acknowledging means.

10. A router device as set forth in Claim 9, wherein:

said packet includes a protocol information indicating a protocol used in communication of said packet and an application information indicating an application of said communication terminal for processing the content of said packet; and

said connection acknowledging means acknowledges the type of packet in response to said protocol information and the application information.

11. A router device as set forth in Claim 10, wherein:

said packet includes a priority information desired by a terminal device transmitting said packet, the priority information indicating a degree of priority of the processing

on said packet; and

said connection acknowledging means acknowledges the type of packet in reference to said priority information.

12. A network system having of a plurality of networks each being connected to at least one communication terminal and at least two router devices for connecting said networks to each other, said network system comprising:

at least one management terminal for transmitting a managing packet for managing the networks; and

wherein said at least one management terminal generates a managing packet including information for a permit list in said router devices indicating either an allowed opening or not-allowed opening of a connection for every connection and information for a management table in said router devices indicating the content of a traffic control performed for said every connection of said communication terminals and transmits the managing packet to the router devices; and

wherein said router devices comprises registering means for revising the content of said permit list and said management table in response to said information included in said managing packet.

13. A network system according to claim 12, wherein:

the router device connected to the communication terminal of transmitter generates a control packet for requesting traffic control in response to receiving a data

packet of not-opened connection whose opening is allowed in said permit list and transmits the packet for traffic control; and

the router device connected to the communication terminal of receiver generates a control packet for response in response to receiving the packet for requesting traffic control for registered connection in said permit list and transmits the packet for response.

14. A router device comprising
- a processor;
 - a memory for storing a program to be executed by the processor;
 - a network controller connected to a network for receiving and transmitting packets;
 - a buffer memory for storing packets received and transmitted by the network controller;
 - said memory having a management table which has information indicating the content of a traffic control performed for every connection respectively of a communication terminal connected to said router device without passing through other router devices;
- wherein said processor when executing said program performs:
- a step for receiving a packet from said network;
 - a step of acknowledging a connection to communicate the packet in reference to the content of the packet;
 - a step for generating a control packet including

information indicating said connection in the case that the received packet is a packet of not-opened connection and information indicating the content of traffic control registered in said management table in correspondent with said connection ;and

a step for transmitting the generated control packet to other router devices included in said connection from said transmission means.

15. A router device according to claim 14,

further comprising a permit list indicating either an allowed opening or not-allowed opening of said connection for every connection; and

wherein said processor when executing said program after said acknowledging step further performs;

a step of for checking whether or not opening of said connection is allowed in reference to said permit list.

16. A router device as set forth in Claim 14, wherein:

said management table stored in said memory has information indicating the content of the traffic control for said every connection which is registered for every type of said packets; and

wherein said processor when executing said program further performs:

a step of acknowledging the type of said received packet; and

a step of generating said control packet using the

information indicating the content of the traffic control registered in said management table in correspondence with the types of the connection and the packet acknowledged.

17. A router device as set forth in Claim 16, wherein:

wherein said acknowledging step includes:

a sub step of acknowledging the type of said received packet in response to a protocol information indicating a protocol used in communication of said packet and an application information indicating an application of a communication terminal for processing the content of said packet.

18. A router device as set forth in Claim 17, wherein:

wherein said acknowledging step further includes:

a sub step of acknowledging the type of packet in reference to a priority information included in said received packet, the priority information desired by a terminal device transmitting said packet indicates a degree of priority of the processing on said packet.

19. A computer program stored on a storage medium, for routing a packet in a network, said computer program when executed by a computer causes said computer to perform the steps of:

receiving a packet from said network;

acknowledging a connection to communicate the packet in reference to the content of the packet;

generating a control packet including information indicating said connection in the case that the received packet is a packet of not-opened connection and information indicating the content of traffic control registered in a management table in correspondent with said connection, said management table has information indicating the content of a traffic control performed in respect to said connection for every connection of a communication terminal connected to said network connected said router device without passing through other router devices ;and

transmitting the generated control packet to other router devices included in said connection from said transmission means.

20. A computer program according to claim 19, after the acknowledging step, further causing said computer to perform the step of:

checking whether or not opening of said connection is allowed in reference to a permit list indicating either an allowed opening or not-allowed opening of said connection for every connection.

21. A computer program according to claim 19, after the acknowledging step, further causing said computer to perform the step of:

acknowledging the type of said received packet; and
generating said control packet using the information indicating the content of the traffic control in correspondence

with the types of the connection and the packet acknowledged, said information indicating the content of the traffic control for every connection is registered in said management table for every type of said packet.

22. A computer program according to claim 21, after the acknowledging step, further causing said computer to perform the step of:

acknowledging the type of said received packet in response to a protocol information indicating a protocol used in communication of said packet and an application information indicating an application of a communication terminal for processing the content of said packet.

23. A computer program according to claim 22, after the acknowledging step, further causing said computer to perform the step of:

acknowledging the type of packet in reference to a priority information included in said received packet, the priority information desired by a terminal device transmitting said packet indicates a degree of priority of the processing on said packet.

24. A management terminal for managing networks, said networks each being connected to at least one communication terminal and at least two router devices for connecting said networks to each other, said management terminal performs the steps of:

generating a managing packet including information for a permit list in said router devices indicating either an allowed opening or not-allowed opening of a connection for every connection and information for a management table in said router devices indicating the content of a traffic control performed for said every connection of said communication terminals; and

transmitting said managing packet to said router devices.

25. A computer program according to claim 19 wherein said storage medium is included in a server connected to a network which is connected to a plurality of computers; and

wherein said server transfers said computer program stored on said storage medium to said computers connected to said network.